EXPLANATION OF PLATE XXXV.

Fig. 1. *Actinometra annulata*, showing the disk with its cirri, the mode of division of the arms, and one arm along the whole of its uninjured extent.
2. View of part (fig. 1, *x*) of the dorsal surface of the arm.
2*a*. View of dorsal surface further out (fig. 1, *y*).
2*b*. View of ditto, near the tip: all × 4.
3. The first pinnule (of 50 joints). × 3.
3*a*. A pinnule (of 21 joints) near the middle of the arm, × 6.
3*b*. A pinnule (of 26 joints) from near the end of the arm, × 6. The hooks on the free ends of the later pinnules are shown.
4. A cirrus, × 6.

4. On the Identity of *Anguilla kieneri*, Günther, with a Gadoid *Lycodes*. By Francis Day, F.Z.S.

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In the 'Annals and Magazine of Natural History,' 1874 (xiii. pp. 138, 139), Dr. Günther gave some notes upon fishes obtained at considerable depths in the North Atlantic, remarking (p. 139) that "a small *fourth* bottle contains only one specimen; it is labelled, in Mr. Couch's handwriting, '*Ophidium*—eel-like, deep sea—1869. H.M.S. 'Porcupine.' 180 fathoms.' This specimen is the young of *Anguilla kieneri*, a species hitherto known from the Mediterranean only." The capture of this so-called "eel" is part of the evidence adduced to prove "that fishes hitherto known from more southern latitudes occur in the North Atlantic at a moderate depth (of between 80 and 200 fathoms)."

It was with some interest that I commenced my examination of this British fish, which had been placed in such dissimilar positions in the ichthyological system, viz. by Couch among the Gadoids, by Günther among the Eels. The first thing that struck my attention was that it possessed small and jugular ventral fins and non-imbricate scales on the body, and was evidently widely separated from the Eels. Spineless, with its vertical fins confluent, a narrow gill-opening, the gill-membranes attached to the isthmus, and the upper jaw longer than the lower, it was evidently a Gadoid (as characterized in the British-Museum Catalogue), but had not the wide gill-openings of fishes belonging to the genus *Ophidium*, in which Couch had located it, but the narrow ones of the Lycodontidæ, and appertained to *Lycodes*.

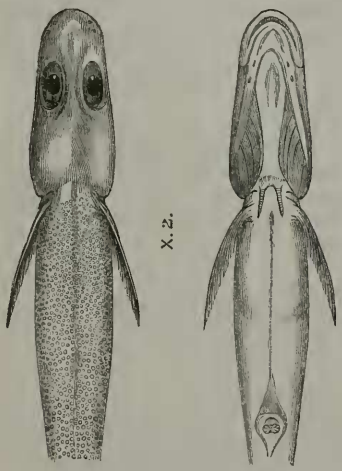
Lycodes is not a Mediterranean form, but is found in Arctic America and Greenland, from which wanderers may extend southwards; for this genus has been shown to possess more species than any other deep-sea Arctic form at present known.

Naming such a young example of *Lycodes*, or instituting a new designation for the reception of this specimen, would be open to strong objections[1]. Soon after it was captured it was evidently placed in very strong alcohol, and as a result has stiffened, shrivelled, and contorted into an unnatural shape. Irrespective of this, as

[1] Until it can be ascertained what species it is the young of, the specimen may be termed *Lycodes kieneri*, Günther.

Collett has remarked, to determine the species of this genus is at all times difficult, owing to the unsatisfactory condition of the older type specimens, as well as the great individual variations in proportions, colour, and amount of scaling that occur among examples of the same species, and which may sometimes be due to sexual conditions. It admits of the clearest proof that the young and adult individuals of the same species exhibit marked dissimilarity.

The example is $3\frac{1}{2}$ inches in length; its head is one seventh of the total length, and the greatest height of the body one fourteenth of the total length; the height of the head is two fifths of its length, and but little less than its width. Eyes comparatively large, being about one fourth of the length of the head, one diameter from the end of the snout, and less than one diameter apart. Teeth in the



Lycodes kieneri (Günther), $\frac{2}{1}$.

jaws, vomer, and palate. Scales existing from the head and back of the pectoral fin backwards over the body. It seems as if only one lateral line were present. The fins are too much stiffened for it to be possible to count the fin-rays; the pectoral turned forwards reaches the middle of the eye; the ventrals, consisting of one or two rays each, are rather more than half as long as the eye. No open glands are visible on the cheeks and gill-covers; but three are placed along the edge of the upper jaw, and some along the lower jaw.

My principal reasons for directing attention to this specimen are, first, to point out that the Mediterranean *Anguilla kieneri* has not yet been obtained from our coasts, and consequently is not entitled to any place in the British Fauna; secondly, to show that the Arctic genus *Lycodes* is represented by this wrongly determined specimen. But to what species the fish belongs I do not consider sufficient data are at hand on which to form a definite opinion.